STIC Search Report
EIC 2100

STIC Database Tracking Number: 143606

TO:	From:
Michael B Holmes **Location: 5A49** **Art Unit : 2121** **Thursday, February 10, 2005** **Case Serial Number: 09/996014**	**Geoffrey St. Leger** **Location: EIC 2100** **Randolph-4B31** **Phone: 23450** **geoffrey.stleger@uspto.gov**

Search Notes

Dear Examiner Holmes,

Attached please find the results of your search request for application 09/996014. I searched Dialog's patent files, technical databases and general files; along with ACM and IBM's TDBs.

Please let me know if you have any questions.

Regards,

Geoffrey St. Leger
4B30/308-7800

```
File   8:Ei Compendex(R) 1970-2005/Jan W3
         (c) 2005 Elsevier Eng.  Info. Inc.
File  35:Dissertation Abs Online 1861-2005/Jan
         (c) 2005 ProQuest Info&Learning
File  65:Inside Conferences 1993-2005/Feb W1
         (c) 2005 BLDSC all rts. reserv.
File   2:INSPEC 1969-2005/Jan W5
         (c) 2005 Institution of Electrical Engineers
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         (c) 2005 NTIS, Intl Cpyrght All Rights Res
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         (c) 2005 INIST/CNRS
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         (c) 1998 Inst for Sci Info
File  34:SciSearch(R) Cited Ref Sci 1990-2005/Feb W1
         (c) 2005 Inst for Sci Info
File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Jan
         (c) 2005 The HW Wilson Co.
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group
File 266:FEDRIP 2004/Nov
         Comp & dist by NTIS, Intl Copyright All Rights Res
File  95:TEME-Technology & Management 1989-2005/Jan W1
         (c) 2005 FIZ TECHNIK
File  62:SPIN(R) 1975-2005/Nov W3
         (c) 2005 American Institute of Physics
File 239:Mathsci 1940-2005/Mar
         (c) 2005 American Mathematical Society

Set     Items   Description
S1      36762   NEUROFUZZY OR (NEURO OR NEURAL)()FUZZY OR FUZZY(5N)(NEURAL-
             ()(NET? ? OR NETWORK? ?))
S2        540   S1(10N)FILTER???
S3     126447   SIGNAL? ?(7N)FILTER???
S4   13281460   WEIGHT? OR IMPORTAN? OR SIGNIFICAN? OR INFLUENC? OR EMPHAS-
            I? OR PROMINEN? OR STRESS OR RELEVAN? OR PERTINEN? OR PRIORITY
             OR PRIORITIES OR GRADE? ? OR GRADING OR RATING OR SCOR???
S5      80920   S4(7N)(RECONSTRUCT? OR REBUILD? OR REPRODUC? OR RECALCULAT?
             OR RECOMPUT??? OR RECREAT? OR RESTRUCTUR??? OR REDEFIN? OR R-
            EFORM??? OR REESTABLISH? OR REMAK??? OR RESTOR???)
S6        632   S4(7N)(RE()(CONSTRUCT? OR BUILD??? OR PRODUC? OR CALCULAT?
            OR COMPUT??? OR CREAT??? OR STRUCTUR??? OR DEFIN??? OR FORM???
             OR ESTABLISH? OR MAK???))
S7     757717   S4(7N)(CONVERT? OR CONVERSION OR TRANSFORM? OR CHANG??? OR
            ALTER??? OR ALTERATION OR ADJUST??? OR ADJUSTMENT OR MODIF????
             OR MODIFICATION)
S8     134229   S4(7N)(BOOST??? OR AUGMENT??? OR ENHANC??? OR AMPLIF?)
S9        209   S1 AND S3
S10        12   (S2 OR S9) AND S5:S8
S11        10   RD (unique items)
S12       232   AU=(POLUZZI, R? OR MIONE, C? OR SAVI, A? OR POLUZZI R? OR -
            MIONE C? OR SAVI A?)
S13        15   S1 AND S12
S14         8   RD (unique items)
S15         1   S2:S3 AND S14
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11/5/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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06789712 E.I. No: EIP04148097789
Title: Statistical Image Processing: Principle and Algorithms (I)
Author: Chen, Li; Cooley, Donald H.; Zhang, Jianping
Corporate Source: Scientific and Practical Computing, North Logan, UT 84341, United States
Conference Title: 4th International Conference on Computer Science and Informatics, JCIS 1998
Conference Location: Research Triangle Park, NC, United States Conference Date: 19981023-19981028
Sponsor: Association for Intelligent Machinery; Duke University; Elsevier Publishing Company; Information Sciences Journal; US Army Research Office, Research Triangle Park, NC, USA
E.I. Conference No.: 62548
Source: Proceedings of the Joint Conference on Information Sciences v 3 1998.
Publication Year: 1998
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)
Journal Announcement: 0404W1
Abstract: A real digital image processing system contains data acquisition, processing, and display. Image acquisition is to get image data through hardware such as camera and digitizer. Display usually means to show the data on TV monitors or printers. Processing means calculations that are in algorithmic form. Basically, image processing has the following aspects: image transforms, enhancement, restoration, compression and sequential image processing, segmentation, description and registration, **reconstruction** , and recognition. Statistics plays a very **important** role for each aspect in general. This paper will introduce several basic statistical methods and algorithms in object search, description and data fitting, segmentation, recognition and interpretation, and sequential image processing. We will also explain how to implement fast statistical algorithms for real image processing.
Descriptors: *Image analysis; Statistical optics; Data acquisition; Computer hardware; Convolution; Nonlinear **filtering** ; Adaptive **filtering** ; Image segmentation; Pattern recognition; Merging; **Neural networks** ; Rough set theory; **Fuzzy** sets
Identifiers: Digital images; Statistical image processing
Classification Codes:
723.2 (Data Processing); 741.1 (Light & Optics); 922.2 (Mathematical Statistics); 716.1 (Information & Communication Theory); 731.1 (Control Systems); 723.1 (Computer Programming); 723.4 (Artificial Intelligence); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 921.6 (Numerical Methods)
723 (Computer Software, Data Handling & Applications); 741 (Light, Optics & Optical Devices); 922 (Statistical Methods); 722 (Computer Hardware); 716 (Electronic Equipment, Radar, Radio & Television); 731 (Automatic Control Principles & Applications); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 74 (LIGHT & OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 73 (CONTROL ENGINEERING)

11/5/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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06692604 E.I. No: EIP04037822557
Title: Color filter **based on** fuzzy neural network
Author: Lai, Yi-Nan; Dong, Hui-Juan; Tan, Jia-Xiang
Corporate Source: Sch. of Mech. and Elec. Eng. Harbin Inst. of Technol., Harbin 150001, China
Source: Harbin Gongye Daxue Xuebao/Journal of Harbin Institute of Technology v 35 n 8 August 2003. p 996-998+1001
Publication Year: 2003

CODEN: HPKYAY ISSN: 0367-6234
Language: Chinese
Document Type: JA; (Journal Article) Treatment: T; (Theoretical); X; (Experimental)
Journal Announcement: 0401W4
Abstract: A new **filter** based on **Fuzzy Neural Network** (FNN) judges the relation of neighbour pixel and center pixel according to a fuzzy weighted averaging operation performed on pixel vectors in the filter window, while the **weights** are **adjusted** automatically by self-study and self-organizing functions of the neural network, so the noise component is filtered out. The new FNN filter was compared with the vector median filter (VMF) using image Flowers and image Lena. Experimental results indicate that FNN has better filtering-out effect on impulse noise, Gaussian noise and mixed noise than VMF, with preserving edges and fine image details. 5 Refs.
Descriptors: *Optical **filters** ; Color; Image processing; **Neural networks** ; **Fuzzy** sets; Acoustic noise
Identifiers: Color filtering; Vector median filter; Mixed noise
Classification Codes:
741.3 (Optical Devices & Systems); 741.1 (Light & Optics); 723.4 (Artificial Intelligence); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 751.4 (Acoustic Noise)
741 (Light, Optics & Optical Devices); 723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 751 (Acoustics, Noise & Sound)
74 (LIGHT & OPTICAL TECHNOLOGY); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 75 (SOUND & ACOUSTICAL TECHNOLOGY)

11/5/3 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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06633756 E.I. No: EIP03487759867
Title: A comparison of neural networks and sub-space detectors for the discrimination of low-metal content landmines
Author: Nelson, Blaine; Schofield, Deborah; Collins, Leslie
Corporate Source: Department of Computer Science University of South Carolina, Columbia, SC, United States
Conference Title: PROCEEDINGS OF SPIE SPIE - The International Society for Optical Engineering: Detection and Remediation Technologies for Mines and Minelike Targets VIII
Conference Location: Orlando, FL, United States Conference Date: 20030421-20030425
Sponsor: SPIE - The International Society for Optical Engineering
E.I. Conference No.: 61935
Source: Proceedings of SPIE - The International Society for Optical Engineering v 5089 n 2 2003. p 1046-1053
Publication Year: 2003
CODEN: PSISDG ISSN: 0277-786X
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)
Journal Announcement: 0312W1
Abstract: Low-metal content landmines can be particularly difficult to detect and classify with electromagnetic induction (EMI) systems. Their responses are often less than that of indigenous clutter and the small amounts of asymmetrically distributed metal results in **significant changes** in the signature of the mine as the sensor to target orientation varies. A number of algorithms have been previously developed in order to aid in target classification and reduce the false-alarm rate. In our work, multiple data sets were collected for each of five targets, of varying metal content, at several sensor to target heights and horizontal displacements using a prototype frequency-domain EMI sensor, the Geophex GEM-3. The data was then evaluated using one of three classification algorithms including a neural network, a matched filter, and a normalized matched filter. Here, a One Class One Network (OCON) architecture in which only one neural network makes a decision was selected for use. We will discuss the training and testing process for this algorithm. We will also

show that the neural network performed much better than the matched filter but slightly worse than the normalized matched filter. In addition, the results demonstrate the necessity of training the algorithms with spatially collected data when precise sensor positioning is not possible. 5 Refs.

Descriptors: *Ammunition; Electromagnetic wave scattering; Electromagnetic fields; Sensors; Decision making; **Neural networks** ; Wave **filters** ; Algorithms; **Fuzzy** sets

Identifiers: Electromagnetic induction (EMI); Landmines

Classification Codes:

404.1 (Military Engineering); 732.2 (Control Instrumentation); 912.2 (Management); 723.4 (Artificial Intelligence); 703.2 (Electric Filters)

404 (Civil Defense & Military Engineering); 711 (Electromagnetic Waves) ; 701 (Electricity & Magnetism); 732 (Control Devices); 912 (Industrial Engineering & Management); 723 (Computer Software, Data Handling & Applications); 703 (Electric Circuits); 921 (Applied Mathematics)

40 (CIVIL ENGINEERING, GENERAL); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 70 (ELECTRICAL ENGINEERING, GENERAL); 73 (CONTROL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

11/5/4 (Item 4 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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05537577 E.I. No: EIP00045138277

Title: Comparative study of different methods for realizing DFNN algorithm

Author: Er, Meng Joo; Wong, Wai Mun; Wu, Shiqian

Corporate Source: Nanyang Technological Univ, Singapore, Singapore

Conference Title: The 38th IEEE Conference on Decision and Control (CDC)

Conference Location: Phoenix, AZ, USA Conference Date: 19991207-19991210

Sponsor: IEEE/CSS

E.I. Conference No.: 56548

Source: Proceedings of the IEEE Conference on Decision and Control v 3 1999. IEEE, Piscataway, NJ, USA. p 2641-2642

Publication Year: 1999

CODEN: PCDCDZ ISSN: 0191-2216

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0006W1

Abstract: This paper presents a comparative study of different methods for realizing the basic learning algorithm of Dynamic **Fuzzy Neural Networks** (DFNNs). Performances between the Least Squared Estimation (LSE), Kalman **Filter** (KF) and Extended Kalman Filter (EKF) methods used for **weight adjustment** in the basic learning algorithm of DFNNs in terms of learning speed, neuron requirement, approximation accuracy and noise immunity are evaluated and compared. (Author abstract) 4 Refs.

Descriptors: ***Neura** l **networks** ; **Fuzzy** sets; Learning algorithms; Least squares approximations; Kalman **filtering** ; Mathematical models; Matrix algebra

Identifiers: Dynamic **fuzzy neural network** ; Extended Kalman **filter** ; **Weight adjustment** ; Radial basis function

Classification Codes:

723.4 (Artificial Intelligence); 731.1 (Control Systems); 723.5 (Computer Applications); 921.6 (Numerical Methods); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)

723 (Computer Software); 731 (Automatic Control Principles); 921 (Applied Mathematics)

72 (COMPUTERS & DATA PROCESSING); 73 (CONTROL ENGINEERING); 92 (ENGINEERING MATHEMATICS)

11/5/5 (Item 5 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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04408158 E.I. No: EIP96053194308
Title: Data-dependent filters **using** fuzzy - neural network
Author: Taguchi, Akira; Takashima, Hironori
Corporate Source: Musashi Inst of Technology, Tokyo, Jpn
Conference Title: Proceedings of the 1995 IEEE International Conference on Neural Networks. Part 1 (of 6)
Conference Location: Perth, Aust Conference Date: 19951127-19951201
E.I. Conference No.: 44687
Source: IEEE International Conference on Neural Networks - Conference Proceedings v 1 1995. IEEE, Piscataway, NJ, USA,95CB35828. p 584-587
Publication Year: 1995
CODEN: ICNNF9
Language: English
Document Type: CA; (Conference Article) Treatment: A; (Applications); T ; (Theoretical)
Journal Announcement: 9607W2
Abstract: This paper presents a design method of data-dependent filters by using fuzzy inference for the purpose of restoring signals degraded by additive noise. Since the antecedents of fuzzy inference can be composed of many local characteristics, it is possible for the proposed filter to **adjust** its **weights** to adapt to local data in input **signal** . The proposed **filter** achieve maximum noise reduction in uniform areas and preserve details of input **signals** as well. Furthermore, the proposed **filter** can be constructed by **fuzzy neural networks** , thus, the tuning of this results in BP algorithm. (Author abstract) 9 Refs.
Descriptors: ***Neura** l **networks** ; **Signal filtering** and prediction; **Fuzzy** sets; Inference engines; Parameter estimation; Backpropagation; Learning algorithms
Identifiers: Data dependent **filters** ; **Fuzzy neural networks**
Classification Codes:
723.4.1 (Expert Systems)
723.4 (Artificial Intelligence); 716.1 (Information & Communication Theory); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)
723 (Computer Software); 716 (Radar, Radio & TV Electronic Equipment); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATIONS); 92 (ENGINEERING MATHEMATICS)

11/5/6 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC
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6545384 INSPEC Abstract Number: C2000-05-1230D-019
Title: A comparative study of different methods for realizing DFNN algorithm
Author(s): Meng Joo Er; Wai Mun Wong; Shiqian Wu
Author Affiliation: Sch. of Electr. & Electron. Eng., Nanyang Technol. Univ., Singapore
Conference Title: Proceedings of the 38th IEEE Conference on Decision and Control (Cat. No.99CH36304) Part vol.3 p.2641-2 vol.3
Publisher: IEEE, Piscataway, NJ, USA
Publication Date: 1999 Country of Publication: USA 5 vol.(xvii+5325) pp.
ISBN: 0 7803 5250 5 Material Identity Number: XX-2000-00372
U.S. Copyright Clearance Center Code: 0 7803 5250 5/99/$10.00
Conference Title: Proceedings of 1999 Conference on Decision and Control
Conference Sponsor: IEEE Control Syst. Soc
Conference Date: 7-10 Dec. 1999 Conference Location: Phoenix, AZ, USA
Language: English Document Type: Conference Paper (PA)
Treatment: Practical (P); Theoretical (T)
Abstract: Presents a comparative study of different methods for realizing the basic learning algorithm of dynamic **fuzzy neural networks** (DFNNs). Performances of the least squared estimation, Kalman **filter** and extended Kalman filter methods used for **weight adjustment** in the basic

learning algorithm of DFNNs in terms of learning speed, neuron requirement, approximation accuracy and noise immunity are evaluated and compared. (4 Refs)
Subfile: C
Descriptors: filtering theory; fuzzy neural nets; Kalman filters; learning (artificial intelligence); least squares approximations; nonlinear filters; parameter estimation
Identifiers: basic learning algorithm; dynamic fuzzy neural networks; least squared estimation; extended Kalman filter; **weight adjustment** ; learning speed; neuron requirement; approximation accuracy; noise immunity
Class Codes: C1230D (Neural nets); C5290 (Neural computing techniques); C4130 (Interpolation and function approximation (numerical analysis)); C1220 (Simulation, modelling and identification); C1260S (Signal processing theory); C1230L (Learning in AI)
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11/5/7 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC
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5255862 INSPEC Abstract Number: B9606-6140-095, C9606-1260-055
Title: Data-dependent filters **with** fuzzy - neural network
Author(s): Taguchi, A.; Takashima, H.
Author Affiliation: Dept. of Electr. & Electron. Eng., Musashi Inst. of Technol., Tokyo, Japan
Conference Title: 1995 IEEE International Conference on Neural Networks Proceedings (Cat. No.95CH35828) Part vol.1 p.584-7 vol.1
Publisher: IEEE, New York, NY, USA
Publication Date: 1995 Country of Publication: USA 6 vol. 1+3219 pp.
ISBN: 0 7803 2768 3 Material Identity Number: XX95-02346
U.S. Copyright Clearance Center Code: 0 7803 2768 3/95/$4.00
Conference Title: Proceedings of ICNN`95 - International Conference on Neural Networks
Conference Sponsor: IEEE Australia Council
Conference Date: 27 Nov.-1 Dec. 1995 Conference Location: Perth, WA, Australia
Language: English Document Type: Conference Paper (PA)
Treatment: Theoretical (T)
Abstract: This paper presents a design method of data-dependent filters by using fuzzy inference for the purpose of restoring signals degraded by additive noise. Since the antecedents of fuzzy inference can be composed of many local characteristics, it is possible for the proposed filter to **adjust** its **weights** to adapt to local data in input **signal** . The proposed **filter** achieve maximum noise reduction in uniform areas and preserve details of input **signals** as well. Furthermore, the proposed **filter** can be constructed by **fuzzy neural networks** , and so the tuning of this results in backpropagation algorithm. (9 Refs)
Subfile: B C
Descriptors: adaptive filters; backpropagation; filtering theory; **fuzzy neural nets** ; signal restoration
Identifiers: data-dependent filters; **fuzzy - neural network** ; fuzzy inference; signal restoration; noise reduction; backpropagation
Class Codes: B6140 (Signal processing and detection); C1260 (Information theory); C1230D (Neural nets)
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11/5/8 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC
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5212913 INSPEC Abstract Number: B9604-6140C-457, C9604-5260B-233
Title: Texture segmentation system based on opto-electronic hybrid fuzzy neural network
Author(s): Feng Wenyi; Wang Wenlu; Yan Yingbai; Jing Guofan; Wu Minxian
Author Affiliation: Dept. of Precision Instrum., Tsinghua Univ., Beijing, China

Conference Title: Proceedings of International Conference on Neural Information Processing (ICONIP `95) Part vol.2 p.745-8 vol.2
Editor(s): Zhong, Y.; Yang, Y.; Wang, M.
Publisher: Publishing House of Electron. Ind, Beijing, China
Publication Date: 1995 Country of Publication: China 2 vol. 1072 pp.
Material Identity Number: XX96-00502
Conference Title: Proceedings of International Conference on Neural Information Processing - ICONIP `95
Conference Sponsor: Asia-Pacific Neural Networks Assembly (APNNA); IEEE Region 10; IEEE Commun. Soc
Conference Date: 30 Oct.-2 Nov. 1995 Conference Location: Beijing, China
Language: English Document Type: Conference Paper (PA)
Treatment: Theoretical (T)
Abstract: A texture segmentation system based on opto-electronic hybrid **fuzzy neural network** is set up. Gabor **filters** , which form an approximate basis for a wavelet **transform** , are used as **weights** to extract texture features. A fuzzy expert system with neural network is trained to integrate the features and produce a segmentation. The simulated calculation and experimental results declare that the system can make rapid segmentation of aerial photos and rock patterns having "uniform" texture. (3 Refs)
Subfile: B C
Descriptors: expert systems; fuzzy neural nets; image segmentation; image texture; integrated optoelectronics; optical neural nets
Identifiers: texture segmentation; opto-electronic; fuzzy neural network; texture features; fuzzy expert system; aerial photos; rock patterns
Class Codes: B6140C (Optical information, image and video signal processing); B4180 (Optical logic devices and optical computing techniques); C5260B (Computer vision and image processing techniques); C1230D (Neural nets); C6170 (Expert systems); C5290 (Neural computing techniques); C5270 (Optical computing techniques)
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11/5/9 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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05056829 Genuine Article#: TM696 Number of References: 11
Title: A SYNTHESIS OF AN OPTIMAL FUZZY FILTER BASED ON LOCAL STATISTICS
Author(s): TAKASHIMA H; TAGUCHI A; MURATA Y
Corporate Source: MUSASHI INST TECHNOL,FAC ENGN/TOKYO 158//JAPAN/
Journal: ELECTRONICS AND COMMUNICATIONS IN JAPAN PART III-FUNDAMENTAL ELECTRONIC SCIENCE, 1995, V78, N8 (AUG), P10-21
ISSN: 1042-0967
Language: ENGLISH Document Type: ARTICLE
Geographic Location: JAPAN
Subfile: SciSearch; CC ENGI--Current Contents, Engineering, Technology & Applied Sciences
Journal Subject Category: ENGINEERING, ELECTRICAL & ELECTRONIC
Abstract: This paper presents a design method of data-dependent filters that uses simplified fuzzy inference. Since the antecedents of fuzzy inference can comprise several local characteristics (i.e., observation values), it is possible for the fuzzy filter to **adjust** its **weights** to adapt to local image data. The tuning of membership functions and fuzzy rules of the proposed filter results in a least mean square (LMS)-like algorithm. Thus, local characteristics can be increased for the proposed fuzzy filter optimally. This paper, introduces a new observation value (calculated from local statistics) into the proposed filter. The proposed filter changes **filter** behavior according to the local properties of **signals** and provides good noise attenuation in all regions of image, including detail regions, while still preserving the details.
Descriptors--Author Keywords: NONLINEAR FILTER ; SIMPLIFIED FUZZY INFERENCE ; OPTIMIZATION ; LOCAL STATISTICS
Identifiers--KeyWords Plus: IMAGE-ENHANCEMENT
Research Fronts: 94-3062 001 (**FUZZY** CONTROLLER; **NEURAL NETWORKS** ;

MULTIPLE CRITERIA LINGUISTIC DECISION-MODEL (MCLDM) FOR HUMAN DECISION-MAKING)
94-7182 001 (NONLINEAR DYNAMICS; VOLTERRA FILTER IDENTIFICATION; LAGUERRE EXPANSIONS OF KERNELS)

Cited References:
ARAKAWA K, 1991, V2, P878, P IFES 91
HARASHIMA H, 1982, V66, P297, T IEICE A
HARASHIMA H, 1988, V71, P143, T IEICE A
KO SJ, 1991, V38, P984, IEEE T CIRCUITS SYST
LEE JS, 1980, V2, P165, IEEE T PATTERN ANAL
LEE YH, 1985, V33, P672, IEEE T ACOUST SPEECH
NOMURA H, 1992, V4, P379, J JAPAN FUZZY ASS
PITAS I, 1990, NONLINEAR DIGITAL FI
PROCYK TJ, 1979, V15, P15, AUTOMATICA
TAGUCHI A, 1993, V76, P1808, T IEICE A
TAKASHIMA H, 1994, V77, P827, T IEICE A

11/5/10 (Item 1 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management
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00787976 I94055075264

Rule-base structure identification in an adaptive-network-based fuzzy inference system

(Regelbasierte Strukturidentifikation in einem adaptiven Fuzzy-Interferenzsystem auf der Basis neuronaler Netze)

Chuen-Tsai Sun
Dept. of Comput. & Inf. Sci., Nat. Chiao Tung Univ., Hsinchu, Taiwan

IEEE Transactions on Fuzzy Systems, v2, n1, pp64-73, 1994
Document type: journal article Language: English
Record type: Abstract
ISSN: 1063-6706

ABSTRACT:
We summarize Jang's architecture of employing an adaptive network and the Kalman filtering algorithm to identify the system parameters. Given a surface structure, the adaptively adjusted inference system performs well on a number of interpolation problems. We generalize Jang's basic model so that it can be used to solve classification problems by employing parameterized t-norms. We also **enhance** the model to include **weights** of **importance** so that feature selection becomes a component of the modeling scheme. Next, we discuss two ways of identifying system structures based on Jang's architecture: the top-down approach, and the bottom-up approach. We introduce a data structure, called a fuzzy binary boxtree, to organize rules so that the rule base can be matched against input signals with logarithmic efficiency. To preserve the advantage of parallel processing assumed in fuzzy rule-based inference systems, we give a parallel algorithm for pattern matching with a linear speedup. Moreover, as we consider the communication and storage cost of an interpolation model. We propose a rule combination mechanism to build a simplified version of the original rule base according to a given focus set. This scheme can be used in various situations of pattern representation or data compression, such as in image coding or in hierarchical pattern recognition.

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File 347:JAPIO Nov 1976-2004/Oct(Updated 050208)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200509
         (c) 2005  Thomson Derwent

Set     Items   Description
S1        345   NEUROFUZZY OR (NEURO OR NEURAL)()FUZZY OR FUZZY(5N)(NEURAL-
                ()(NET? ? OR NETWORK? ?))
S2          9   S1(10N)FILTER???
S3      80022   SIGNAL? ?(7N)FILTER???
S4    1435473   WEIGHT? OR IMPORTAN? OR SIGNIFICAN? OR INFLUENC? OR EMPHAS-
                I? OR PROMINEN? OR STRESS OR RELEVAN? OR PERTINEN? OR PRIORITY
                 OR PRIORITIES OR GRADE? ? OR GRADING OR RATING OR SCOR???
S5        5979  S4(7N)(RECONSTRUCT? OR REBUILD? OR REPRODUC? OR RECALCULAT?
                 OR RECOMPUT??? OR RECREAT? OR RESTRUCTUR??? OR REDEFIN? OR R-
                EFORM??? OR REESTABLISH? OR REMAK??? OR RESTOR???)
S6          75  S4(7N)(RE()(CONSTRUCT? OR BUILD??? OR PRODUC? OR CALCULAT?
                OR COMPUT??? OR CREAT??? OR STRUCTUR??? OR DEFIN??? OR FORM???
                 OR ESTABLISH? OR MAK???))
S7      64439   S4(7N)(CONVERT? OR CONVERSION OR TRANSFORM? OR CHANG??? OR
                ALTER??? OR ALTERATION OR ADJUST??? OR ADJUSTMENT OR MODIF????
                 OR MODIFICATION)
S8      12035   S4(7N)(BOOST??? OR AUGMENT??? OR ENHANC??? OR AMPLIF?)
S9          5   S1 AND S3
S10         1   (S2 OR S9) AND S5:S8
S11        10   S2 OR S9:S10
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11/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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016112224 **Image available**
WPI Acc No: 2004-270100/200425
XRPX Acc No: N04-213597

Control system for vehicle e.g. passenger car suspension system, has sensor to produce heave acceleration signal from which high-frequency noise is removed using low pass filter to produce filtered signal **for** fuzzy neural network

Patent Assignee: YAMAHA MOTOR CO LTD (YMHA); DIAMANTE O (DIAM-I); HAGIWARA T (HAGI-I); KANEKO C (KANE-I); PANFILOV S A (PANF-I); TAKAHASHI K (TAKA-I); ULYANOV S V (ULYA-I); YAMAHA MOTOR CORP USA (YMHA)
Inventor: DIAMANTE O; HAGIWARA T; KANEKO C; PANFILOV S A; TAKAHASHI K; ULYANOV S V

Number of Countries: 106 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200425137	A2	20040325	WO 2003US28999	A	20030915	200425	B
US 20040153227	A1	20040805	US 2002410741	P	20020913	200452	
			US 2003662978	A	20030915		
AU 2003278815	A1	20040430	AU 2003278815	A	20030915	200462	

Priority Applications (No Type Date): US 2002410741 P 20020913; US 2003662978 A 20030915
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200425137	A2	E	94	F16F-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20040153227 A1	B62K-025/00	Provisional application US 2002410741	
AU 2003278815 A1	F16F-000/00	Based on patent WO 200425137	

Abstract (Basic): WO 200425137 A2

NOVELTY - The system has a **fuzzy neural network** (1301) with a knowledge base trained by using a teaching signal. The sensors sense heave acceleration to produce a heave acceleration signal from which high-frequency noise is removed using a low pass **filter** (1302) to produce **filtered signal** for the network. A Fourier transform extracts the frequency components of a velocity signal of an integrator for the network.

DETAILED DESCRIPTION - The bandpass and highpass **filters** produces respective **filtered** velocity **signals** for the **fuzzy neural network** . INDEPENDENT CLAIMS are also included for the following:

(a) an optimization control method for controlling a vehicle and suspension system

(b) a method for control of a plant.

USE - Used for controlling shock absorbers in a vehicle e.g. passenger car, suspension system.

ADVANTAGE - The heave acceleration **signal** from the teaching signal is **filtered** to produce **filtered signal** as input for the **fuzzy neural network** to provide accurate and robust control, thereby reducing the number of sensors.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of a learning scheme for a single-sensor scheme.

Fuzzy neural network (1301)
Low pass filter (1302)
Integrator (1303)
Bandpass filter (1304)
High pass filter (1305)

Fast Fourier transform (1306)
pp; 94 DwgNo 13/21
Title Terms: CONTROL; SYSTEM; VEHICLE; PASSENGER; CAR; SUSPENSION; SYSTEM; SENSE; PRODUCE; HEAVE; ACCELERATE; SIGNAL; HIGH; FREQUENCY; NOISE; REMOVE ; LOW; PASS; FILTER; PRODUCE; FILTER; SIGNAL; FUZZ; NEURAL; NETWORK
Derwent Class: Q23; Q63; T01; T06; X22
International Patent Class (Main): B62K-025/00; F16F-000/00
International Patent Class (Additional): G06N-003/00
File Segment: EPI; EngPI

11/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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016083290 **Image available**
WPI Acc No: 2004-241165/200423
XRPX Acc No: N04-191304
Filtering **device for electrical** signal **, includes adder which receives and adds reconstructed samples, and outputs** filtered signal **samples**
Patent Assignee: STMICROELECTRONICS SRL (SGSA)
Inventor: MARTINA G; POLUZZI R; SAVI A; VAGO D
Number of Countries: 030 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1395080	A1	20040303	EP 2002425541	A	20020830	200423	B

Priority Applications (No Type Date): EP 2002425541 A 20020830
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1395080	A1	E	21	H04R-003/00	

Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR

Abstract (Basic): EP 1395080 A1
NOVELTY - The filtering device (1) includes a adder which receives and adds the reconstructed samples, and outputs **filtered signal** samples. The **signal** processing channels receive input signal samples, and generate the reconstructed samples. Each signal processing channel is formed by a **neuro - fuzzy filter** .
USE - Use for **filtering** electrical **signals** e.g. **signals** coming from antenna arrays, biomedical signals, and signals used in geology.
ADVANTAGE - Simplifies filtering structure and reduces the amount of calculations to be performed during the filtering process. Provides a filtering device which is flexible and reliable over time. Enables the filtering device to adapt to existing conditions.
DESCRIPTION OF DRAWING(S) - The figure shows the general block diagram of the filtering device.
Filtering device (1)
Inputs (2L,2R)
Output (7)
pp; 21 DwgNo 1/11
Title Terms: FILTER; DEVICE; ELECTRIC; SIGNAL; ADDER; RECEIVE; ADD; RECONSTRUCT; SAMPLE; OUTPUT; FILTER; SIGNAL; SAMPLE
Derwent Class: T01; U22; W02
International Patent Class (Main): H04R-003/00
File Segment: EPI

11/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015714939 **Image available**
WPI Acc No: 2003-777139/200373
XRAM Acc No: C03-213681
XRPX Acc No: N03-622743

Determining condition of entity, e.g. medical condition of patient, by detecting volatile markers found in gaseous emanation from entity, and processing detected marker data with algorithm that adapts to individual entity

Patent Assignee: FU C Y (FUCY-I)
Inventor: FU C Y
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030008407	A1	20030109	US 2001273125	P	20010303	200373	B
			US 200287049	A	20020302		

Priority Applications (No Type Date): US 2001273125 P 20010303; US 200287049 A 20020302
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030008407	A1		34	C12Q-001/70	Provisional application US 2001273125

Abstract (Basic): US 20030008407 A1

NOVELTY - A condition of an entity is determined by selecting a set of volatile markers which are characteristic of the condition and which will be found in a gaseous emanation from the entity; non-invasively detecting these markers in the gaseous emanation from the entity; and processing the detected marker data with an algorithm that adapts to individual entity.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for detecting a condition of an entity comprising a volatile marker, and a processor for processing detected volatile data and including an algorithm adapted to the individual entity.

USE - The method is for determining a condition of an entity, e.g. disease, including diabetes, cancer, mental illness, ulcers, or human immuno deficiency syndrome, of living human, other living animals or organism, or non-living entities (claimed).

ADVANTAGE - The inventive method is able to monitor the condition state depending on the algorithm or a computational system that can adapt the markers for each entity. The method is able to eliminate environmental and other erroneous contributions to the markers. It provides a more accurate indicator for the condition, depending on the number of markers, degree of correlation between the markers and condition, sensitivity of the detector, and accuracy and complexity of the processing algorithms.

DESCRIPTION OF DRAWING(S) - The figure is a flow chart of determining the status of a marker.

pp; 34 DwgNo 1/13

Title Terms: DETERMINE; CONDITION; ENTITY; MEDICAL; CONDITION; PATIENT; DETECT; VOLATILE; MARK; FOUND; GAS; EMANATING; ENTITY; PROCESS; DETECT; MARK; DATA; ALGORITHM; ADAPT; INDIVIDUAL; ENTITY
Derwent Class: A89; B04; D16; S03; S05; T01
International Patent Class (Main): C12Q-001/70
International Patent Class (Additional): G01N-033/48; G01N-033/50; G06F-019/00
File Segment: CPI; EPI

11/5/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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015016430 **Image available**
WPI Acc No: 2003-076947/200308
XRPX Acc No: N03-059663

Method and appliance for deriving course of traffic lanes by monitoring edges of lines forming lane boundaries

Patent Assignee: OPEL AG ADAM (OPEL); VITRONIC STEIN BILDVERARBEITUNGSSYSTEME (VITR-N)
Inventor: BRENNEIS L; HAMANN C; SCHERER F; SCHUSTER P; SIMM N; VARCHMIN A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 10127034	A1	20021205	DE 1027034	A	20010602	200308	B

Priority Applications (No Type Date): DE 1027034 A 20010602
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 10127034	A1		8	G01C-003/06	

Abstract (Basic): DE 10127034 A1
NOVELTY - At least one camera monitors the dark-light transition point (8) at the edges of the white lines (6,7) marking the boundaries of a carriageway lane. An image processing unit using a model supported and feature based estimation method (involving a Kalman **filter** , **fuzzy** inference machine or a **neural network**) derives state vectors from the measurement targets (9) which describe the vehicle position relevant to the lane boundaries on a display (5)
USE - To provide a vehicle driver with a display showing the vehicle position relative to the lane boundaries.
ADVANTAGE - At relative little computing cost the course of traffic lane is determined with an adequate degree of accuracy.
DESCRIPTION OF DRAWING(S) - The figure shows a schematic representation of an image of a traffic lane producesd by the method to the present invention.
display (5)
white lines (6,7)
transition point (8)
measurement targets. (9)
pp; 8 DwgNo 2/3
Title Terms: METHOD; APPLIANCE; DERIVATIVE; COURSE; TRAFFIC; LANE; MONITOR; EDGE; LINE; FORMING; LANE; BOUNDARY
Derwent Class: Q17; S02; T01; T06; W02; X22
International Patent Class (Main): G01C-003/06
International Patent Class (Additional): B60R-001/00
File Segment: EPI; EngPI

11/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014690055 **Image available**
WPI Acc No: 2002-510759/200255
XRPX Acc No: N02-404301
Filtering **device used for noise reduction, has** neuro - fuzzy filter **for generating output samples from input samples and** reconstruction weights
Patent Assignee: STMICROELECTRONICS SRL (SGSA)
Inventor: MIONE C; POLUZZI R; SAVI A
Number of Countries: 027 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1211636	A1	20020605	EP 2000830782	A	20001129	200255	B
US 20020123975	A1	20020905	US 2001996014	A	20011128	200260	

Priority Applications (No Type Date): EP 2000830782 A 20001129
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1211636	A1	E	24	G06N-003/04	
				Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR	
US 20020123975	A1			G06F-015/18	

Abstract (Basic): EP 1211636 A1
NOVELTY - A computation unit (2) of a **neuro - fuzzy filter** (1) receives input samples of a **signal** to be **filtered** , for generating **signal** features. A **neuro - fuzzy** network (3) receives the signal features to generate **reconstruction weights** . A **reconstruction** unit (4) receives the input samples and the **reconstruction weights**

for generating output samples.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for noise reduction method in filter.

USE - **Filtering** device for reducing noise in acoustic **signals** and images.

ADVANTAGE - Reduces white or colored type noise of the input signal and enables separation of the signals having different features, thereby preserving steep edges of the signals without causing any loss of the signal features.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the filter.

Neuro - fuzzy filter (1)
Computation unit (2)
Neuro - fuzzy network (3)
Reconstruction unit (4)
pp; 24 DwgNo 1/10

Title Terms: FILTER; DEVICE; NOISE; REDUCE; NEURO; FUZZ; FILTER; GENERATE; OUTPUT; SAMPLE; INPUT; SAMPLE; RECONSTRUCT; WEIGHT
Derwent Class: T01
International Patent Class (Main): G06F-015/18; G06N-003/04
File Segment: EPI

11/5/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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013696660
WPI Acc No: 2001-180884/200118
XRPX Acc No: N01-128830

Method of examining the quality of bar codes - with the advantages of high speed and accuracy and avoiding large amount of man-power and man-made mistakes

Patent Assignee: NEOTECH INTELLIGENT AUTOMATION CO LTD (NEOT-N)
Inventor: CHEN C
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
TW 403887	A	20000901	TW 98116319	A	19981001	200118	B

Priority Applications (No Type Date): TW 98116319 A 19981001
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
TW 403887	A			G06K-009/62	

Abstract (Basic): TW 403887 A

NOVELTY - The invention is a method for examining the quality of bar codes, which uses inverse sending neural network and fuzzy decision for detecting bar code positions, and scans said image area one strip after another, then it recognizes with bar code recognition rule separately; the quality of said bar code is regarded as stably excellent if the rate of correct recognition result is larger than one fixed threshold value, otherwise it is rejected as a defect. The method digitizes the bar code image by a scanner or CCD image acquiring device and inputs the image into one computer, after Hough Transform, it calculates the cutting evaluation value of the black and white edges of bar codes by inputting the profile function codes of differential **filter** and integrating **filter** to inverse sending **neural network** and **fuzzy** decision unit. After getting the accurate area position of the image, we scan the image range one strip after another, and get bar code information of each scan line according to the bar code decoding rule. When the rate of correct recognition result is larger than the predefined experience threshold value, the quality of said bar code is regarded as excellent, otherwise it is regarded as an unusable defect.

DwgNo 0/0

Title Terms: METHOD; QUALITY; BAR; CODE; ADVANTAGE; HIGH; SPEED; ACCURACY; AVOID; AMOUNT; MAN; POWER; MAN; MADE; MISTAKE
Derwent Class: T01; T04

International Patent Class (Main): G06K-009/62
File Segment: EPI

11/5/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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013598205 **Image available**
WPI Acc No: 2001-082412/200110
XRPX Acc No: N01-062926
Prosthetic limb has myoelectric signal sensor feeding neural network **and** fuzzy **logic system to operate prosthetic limb**
Patent Assignee: ADVANCED CONTROL RES LTD (ADCO-N)
Inventor: BURNS R S; NURSE P
Number of Countries: 025 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1043003	A1	20001011	EP 2000302346	A	20000322	200110	B
EP 1043003	B1	20040519	EP 2000302346	A	20000322	200433	
DE 6020010789	E	20040624	DE 2000610789	A	20000322	200442	
			EP 2000302346	A	20000322		

Priority Applications (No Type Date): GB 998551 A 19990414; GB 996604 A 19990322
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1043003	A1	E	8	A61F-002/72	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
EP 1043003	B1	E		A61F-002/72	
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
DE 6020010789	E			A61F-002/72	Based on patent EP 1043003

Abstract (Basic): EP 1043003 A1
NOVELTY - The prosthetic limb is attached to a stump such that sensors can detect (MES) myoelectric signals in muscles in the stump. The **signals** are **filtered** (DF1-DF6) and applied to a neural network. This classifies the signals with muscle contractions representing desired movements. The network output is fed through a fuzzy logic controller to select the final movement. A microcontroller then applies movements to the fingers of the prosthesis.
USE - Myoelectric signal control of prosthesis.
ADVANTAGE - Allows the user a number of distinct movements using myoelectric signals.
DESCRIPTION OF DRAWING(S) - Prosthesis control.
Myoelectric signal sensor (MES)
Digital filters (DF)
pp; 8 DwgNo 1/3
Title Terms: PROSTHESIS; LIMB; MYOELECTRIC; SIGNAL; SENSE; FEED; NEURAL; NETWORK; FUZZ; LOGIC; SYSTEM; OPERATE; PROSTHESIS; LIMB
Derwent Class: P32; S05; T01
International Patent Class (Main): A61F-002/72
File Segment: EPI; EngPI

11/5/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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012773764 **Image available**
WPI Acc No: 1999-579991/199949
XRPX Acc No: N99-428172
CMOS current mode four quadrant analog multiplier
Patent Assignee: UNITED MICROELECTRONICS CORP (UNMI-N)
Inventor: CHEN H; GAI W
Number of Countries: 001 Number of Patents: 001

Patent Family:
Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5966040	A	19991012	US 97938747	A	19970926	199949	B

Priority Applications (No Type Date): US 97938747 A 19970926
Patent Details:
Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5966040	A		12	G06F-007/44	

Abstract (Basic): US 5966040 A
NOVELTY - The gate of MOS transistor (P7) is connected to a node in translinear circuit (100) where current is generated, and source connected to system voltage and drain connected to node (J) where output current signal of analog multiplier is taken.
DETAILED DESCRIPTION - A mirror circuit (300) couples two translinear circuits (100,200), to duplicate intermediate current signal (Ip) generated by translinear circuit (200) for use by translinear circuit (100). The current sources (501,502) of magnitudes (Ix,Iy) are connected between node (J) and ground. The two translinear circuits implement two equations, t1/2+a1/2=(Ip=t+a)1/2 and (a+Ix)1/2+(a+Iy)1/2=((Ip+Ix)+(a+Iy))1/2 respectively, where t is defined as t=Ix+Iy+Iz+a, Ip is intermediate current signal.
USE - In modulator, phase comparator, adaptive **filter** , AC- to-DC converter, sine/cosine synthesizer, **fuzzy** logic controller, artificial **neural** **network** , various VLSI systems, such as analog neural networks.
ADVANTAGE - Since analog multiplier is insensitive to variations in temperature and process, it is suitable for VLSI system effectively.
DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of analog multiplier.
Translinear circuits (100,200)
Mirror circuit (300)
Current sources (501,502)
pp; 12 DwgNo 3/7
Title Terms: CMOS; CURRENT; MODE; FOUR; QUADRANT; ANALOGUE; MULTIPLIER
Derwent Class: T01
International Patent Class (Main): G06F-007/44
File Segment: EPI

11/5/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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012552932 **Image available**
WPI Acc No: 1999-359038/199931
XRPX Acc No: N99-267339
Event detector for monitoring waveforms of physical phenomena, e.g. heartbeats
Patent Assignee: SIEMENS CORP RES INC (SIEI)
Inventor: WALTROUS R L; WATROUS R L
Number of Countries: 003 Number of Patents: 003
Patent Family:
Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19855942	A1	19990624	DE 1055942	A	19981204	199931	B
US 5947909	A	19990907	US 97994179	A	19971219	199943	
JP 11244249	A	19990914	JP 98359307	A	19981217	199948	

Priority Applications (No Type Date): US 97994179 A 19971219
Patent Details:
Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19855942	A1		5	G01R-023/165	
JP 11244249	A		4	A61B-005/0472	
US 5947909	A			A61B-005/0456	

Abstract (Basic): DE 19855942 A1
NOVELTY - The detector has a signal input, a number of detectors which respond to the signal input, and an output which responds to the detector outputs. The detectors respond to the morphologies of the

input signal, each responding to a single morphology. The detectors may comprise one or more of the following: artificial **neural networks** , adaptive **filters** , **fuzzy** networks, expert systems or syntactic and probabilistic pattern matchers.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also provided for a method of detecting QRS signals and a QRS detector.

USE - E.g. for events in electrocardiogram outputs.

ADVANTAGE - A characteristic can be reliably identified with the desired degree of accuracy.

DESCRIPTION OF DRAWING(S) - The drawing shows a block circuit diagram of a device for detecting events in waveforms.

pp; 5 DwgNo 1/2

Title Terms: EVENT; DETECT; MONITOR; WAVEFORM; PHYSICAL; PHENOMENON; HEART
Derwent Class: P31; S01; S05; U25
International Patent Class (Main): A61B-005/0456; A61B-005/0472; G01R-023/165
International Patent Class (Additional): A61B-005/0452
File Segment: EPI; EngPI

11/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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010206378 **Image available**
WPI Acc No: 1995-107632/199515
XRPX Acc No: N95-085058

X-ray diagnostics system using fuzzy logic Used in medical diagnostics - has neural network **movement detector operating under** fuzzy **logic rules for control of video** signals filter **stage to identify objects present against poor background**

Patent Assignee: SIEMENS AG (SIEI)
Inventor: HORBASCHEK H
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 4328784	A1	19950309	DE 4328784	A	19930826	199515	B
DE 4328784	C2	19960523	DE 4328784	A	19930826	199625	

Priority Applications (No Type Date): DE 4328784 A 19930826
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 4328784	A1		5	A61B-006/00	
DE 4328784	C2		5	A61B-006/00	

Abstract (Basic): DE 4328784 A

In the X-ray diagnostics system, the transmitted signals pass through a patient (4) and received by an X-ray amplifier (5), and a TV camera (7). The analog video signal is converted (8) into digital form and is received by a processing circuit (9) before output is transmitted to the monitor (11).

The processing circuit has a built-in motion detector (14) and a memory (15) for storing object data. A search process is used to identify a specific object based upon the rules of fuzzy logic. The filter (12) is controlled to provide a sharp focus based upon the processing operation.

ADVANTAGE - Provides improved object identification against poor background.

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File 348:EUROPEAN PATENTS 1978-2005/Jan W05
         (c) 2005 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20050203,UT=20050127
         (c) 2005 WIPO/Univentio

Set     Items   Description
S1        897   NEUROFUZZY OR (NEURO OR NEURAL)()FUZZY OR FUZZY(5N)(NEURAL-
                ()(NET? ? OR NETWORK? ?))
S2         29   S1(10N)FILTER???
S3      63710   SIGNAL? ?(7N)FILTER???
S4    1318935   WEIGHT? OR IMPORTAN? OR SIGNIFICAN? OR INFLUENC? OR EMPHAS-
                I? OR PROMINEN? OR STRESS OR RELEVAN? OR PERTINEN? OR PRIORITY
                 OR PRIORITIES OR GRADE? ? OR GRADING OR RATING OR SCOR???
S5      16041   S4(7N)(RECONSTRUCT? OR REBUILD? OR REPRODUC? OR RECALCULAT?
                 OR RECOMPUT??? OR RECREAT? OR RESTRUCTUR??? OR REDEFIN? OR R-
                EFORM??? OR REESTABLISH? OR REMAK??? OR RESTOR???)
S6        520   S4(7N)(RE()(CONSTRUCT? OR BUILD??? OR PRODUC? OR CALCULAT?
                OR COMPUT??? OR CREAT??? OR STRUCTUR??? OR DEFIN??? OR FORM???
                 OR ESTABLISH? OR MAK???))
S7     183260   S4(7N)(CONVERT? OR CONVERSION OR TRANSFORM? OR CHANG??? OR
                ALTER??? OR ALTERATION OR ADJUST??? OR ADJUSTMENT OR MODIF????
                 OR MODIFICATION)
S8      47369   S4(7N)(BOOST??? OR AUGMENT??? OR ENHANC??? OR AMPLIF?)
S9          2   S2(100N)S5:S8
S10         2   S1(100N)S3(100N)S5:S8
S11         2   S9:S10
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11/3,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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01700493
Device and method for filtering electrical signals, in particular acoustic signals
Vorrichtung und Verfahren zum Filtern elektrischer Signale, insbesondere Akustischer Signale
Dispositif et procede de filtrage de signaux electriques notamment pour signaux acoustiques
PATENT ASSIGNEE:
STMicroelectronics S.r.l., (2522150), Via C. Olivetti, 2, 20041 Agrate Brianza (Milano), (IT), (Applicant designated States: all)
INVENTOR:
Poluzzi, Rinaldo, Piazza Istria, 2, 20125 Milano, (IT)
Savi, Alberto, Via J.F. Kennedy, 18, 20097 San Donato Milanese, (IT)
Martina, Giuseppe, Via Valsesia, 44, 20152 Milano, (IT)
Vago, Davide, Via E. Toti, 19, 21047 Saronno, (IT)
LEGAL REPRESENTATIVE:
Cerbaro, Elena et al (53282), c/o Studio Torta S.r.l. Via Viotti, 9, 10121 Torino, (IT)
PATENT (CC, No, Kind, Date): EP 1395080 A1 040303 (Basic)
APPLICATION (CC, No, Date): EP 2002425541 020830;
DESIGNATED STATES: DE; FR; GB; IT
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: H04R-003/00
ABSTRACT WORD COUNT: 116
NOTE:
Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; Italian
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200410	1863
SPEC A	(English)	200410	5677
Total word count - document A			7540
Total word count - document B			0
Total word count - documents A + B			7540

...SPECIFICATION 1 so as to obtain the desired stream of output samples. Each channel 10L, 10R is a **neuro - fuzzy** filter comprising, in cascade: an input buffer 14L, 14R, which stores a plurality of samples eL(i...

...X3R (i) for each sample eL(i) and eR (i) of the signals to be filtered; a **neuro - fuzzy** network 16L, 16R, which calculates **reconstruction weights** oL3 (i), oR3 (i) on the basis of the features and of the weights W received from...

...on the basis of the samples eL(i) and eR(i) of the respective signal to be **filtered** and of the respective **reconstruction weights** oL3 (i).
The spatial filtering unit 3 functions as follows. Initially, the changeover switches 18L, 18R, 19L, 19R are positioned so as to supply the **signal** to be **filtered** to the feature extraction blocks 15L, 15R and to the signal reconstruction blocks 17L, 17R; and the on-off switches 12L, 12R and 13 are in an opening condition. Then the **neuro - fuzzy filters** 10L, 10R calculate the reconstructed **signal** samples oL(i), oR(i), as mentioned above.
Next, the adder 24 adds the reconstructed signal samples...

...X1L (i) , X2L (i) , X3L (i) and X1R (i) , X2R (i), X3R (i), the calculation of the **reconstruction weights** oL3 (i), oR3 (i), the calculation of the reconstructed signal samples oL (i), oR(i), and their ...suppression or at least considerable reduction in the noise that has a spatial origin different from useful **signal** . **Filtering** may be carried out with a computational burden that is much lower that required by known solutions...

...of the invention also in systems with not particularly marked processing capacities. The calculations performed by the **neuro - fuzzy** networks 16L, 16R and 54 can be carried out using special hardware units, as described in patent...

...variation in the noise enables timely adaptation to the existing conditions, limiting execution of the operations of **weight** learning and **modification** only when the environmental condition so requires.
Finally, it is evident that numerous modifications and variations may ...

...CLAIMS A1
1. A device for **filtering** electrical signals, comprising a number of inputs (2L, 2R) arranged spatially at a distance from one another...

...wherein each neuro-fuzzy filter (10L, 10R) comprises:
- a sample input (18L, 18R), receiving alternately said input **signal** samples and said **filtered signal** samples and supplying samples of **signal** to be **filtered** ;
- **signal** feature computing means (15L, 15R), receiving a respective plurality of samples to be **filtered** and generating **signal** features (X1 (i), X2 (i), X3 (i));
- a neuro-fuzzy network (16L, 16R), receiving said signal features ...

...or 3, wherein said signal feature computing means (15L, 15R) generate, for each said sample to be **filtered** (e (i)) , a first **signal** feature (X1 (i)) correlated with a position of a sample to be **filtered** within an operative sample window; a second **signal** feature (X2 (i)) correlated to the difference between said sample to be filtered and a central sample...
...training signal having a known noise component; a weight supply unit (42), supplying training weights; a spatial **filtering** unit (3), receiving said training **signal** and said training weights and outputting a **filtered** training **signal** ; a processing unit (44) processing said training signal and said filtered training signal and generating a fitness...

...any one claims 5 to 12, further comprising an acoustic scenario change recognition unit (5), receiving said **filtered signal** samples.
14. The device according to claim 13, wherein said acoustic scenario change recognition unit (5) comprises: a subband-splitting block (51), receiving said **filtered signal** samples from said device output (7) and generating a plurality of sets of samples; a features extraction unit (53), calculating features of each set of samples; a **neuro - fuzzy** network (54), generating acoustically **weighted** samples (e1 (i)); and a scenario **change** decision unit (55), receiving said acoustically **weighted** samples and outputting an activation signal for activation of said weight training unit (4).
15. The device...

...each set of samples.
19. The device according to any of claims 14 to 18, wherein said **neuro - fuzzy** network (54) comprises:
- fuzzification neurons (20), receiving said signal features (Y1 (i), Y2(i), Y3(i)) and...

11/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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01432012
Filtering device and method for reducing noise in electrical signals, in particular acoustic signals and images
Filtereinrichtung und Verfahren zur Reduzierung von Geräusch in elektrischen Signalen, insbesondere akustische Signale und Bilder
Methode et dispositif de filtrage pour reduire le bruit dans des signaux

electriques, en particulier des signaux acoustiques et des images

PATENT ASSIGNEE:
STMicroelectronics S.r.l., (1014060), Via C. Olivetti, 2, 20041 Agrate Brianza (Milano), (IT), (Applicant designated States: all)
INVENTOR:
Poluzzi, Rinaldo, Piazza Istria 2, 20100 Milano, (IT)
Mione, Cristoforo, Via Gambate 26, 23854 Olgiate, (IT)
Savi, Alberto, Via Kennedy 78, 20097 San Donato Milanese, (IT)
LEGAL REPRESENTATIVE:
Cerbaro, Elena, Dr. et al (53281), STUDIO TORTA S.r.l., Via Viotti, 9, 10121 Torino, (IT)
PATENT (CC, No, Kind, Date): EP 1211636 A1 020605 (Basic)
APPLICATION (CC, No, Date): EP 2000830782 001129;
DESIGNATED STATES: DE; FR; GB; IT
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G06N-003/04
ABSTRACT WORD COUNT: 199
NOTE:
Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; Italian
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200223	2144
SPEC A	(English)	200223	5372
Total word count - document A			7516
Total word count - document B			0
Total word count - documents A + B			7516

...ABSTRACT A1

The **filtering** device (80) comprises a neuro- **fuzzy** filter (1; 80) and implements a moving-average filtering technique in which the **weights** for final **reconstruction** of the signal (oL3 (i)) are calculated in a **neuro - fuzzy** network (3) according to specific fuzzy rules. The fuzzy rules operate on three signal features (X1(i...

...and to the difference between a sample and the average of the samples in the window. The **filter** device for the analysis of a voice **signal** comprises a bank of **neuro - fuzzy filters** (86, 87). The **signal** is split into a number of sub-bands, according to wavelet theory, using a bank of analysis...

...a pair of FIR QMFs (H0)), H1))) and a pair of downsamplers (85, 86); each sub-band **signal** is **filtered** by a **neuro - fuzzy filter** (86, 87), and then the various sub-bands are reconstructed by a bank of synthesis filters including...

...SPECIFICATION are characterized by a wide spectral range.

The device and the method described are based upon a **neuro - fuzzy** network. They are implemented with a moving-average filtering technique in which the **weighting** factors (or **weights**) for the final **reconstruction** of the signal are calculated in a **neuro - fuzzy** network according to specific fuzzy rules. This enables a better reduction of the noise. The fuzzy rules...

...samples in the window. These signal features may have a considerable influence on the values of the **weights** for the **reconstruction** of the signal; in addition, they may be calculated in a relatively simple manner.

The method and the filter according to the invention moreover comprise a **neuro - fuzzy** filter bank. In this way, the signal may be split into different sub-bands according to wavelet theory: each sub-band **signal** may be **filtered** by a **neuro - fuzzy** network, and then the various sub-bands can be reconstructed by the synthesis filter bank. As is...

```
File 275:Gale Group Computer DB(TM) 1983-2005/Feb 10
         (c) 2005 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2005/Feb 10
         (c) 2005 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2005/Feb 10
         (c) 2005 The Gale Group
File  16:Gale Group PROMT(R) 1990-2005/Feb 10
         (c) 2005 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2005/Feb 09
         (c)2005 The Gale Group
File 624:McGraw-Hill Publications 1985-2005/Feb 10
         (c) 2005 McGraw-Hill Co. Inc
File  15:ABI/Inform(R) 1971-2005/Feb 10
         (c) 2005 ProQuest Info&Learning
File 647:CMP  Computer Fulltext 1988-2005/Jan W4
         (c) 2005 CMP Media, LLC
File 674:Computer News Fulltext 1989-2005/Feb W1
         (c) 2005 IDG Communications
File 696:DIALOG Telecom. Newsletters 1995-2005/Feb 08
         (c) 2005 The Dialog Corp.
File 369:New Scientist 1994-2005/Jan W5
         (c) 2005 Reed Business Information Ltd.

Set     Items   Description
S1       2349   NEUROFUZZY OR (NEURO OR NEURAL)()FUZZY OR FUZZY(5N)(NEURAL-
                ()(NET? ? OR NETWORK? ?))
S2         47   S1(10N)FILTER???
S3      10365   SIGNAL? ?(7N)FILTER???
S4   10204917   WEIGHT? OR IMPORTAN? OR SIGNIFICAN? OR INFLUENC? OR EMPHAS-
                I? OR PROMINEN? OR STRESS OR RELEVAN? OR PERTINEN? OR PRIORITY
                OR PRIORITIES OR GRADE? ? OR GRADING OR RATING OR SCOR???
S5     122172   S4(7N)(RECONSTRUCT? OR REBUILD? OR REPRODUC? OR RECALCULAT?
                OR RECOMPUT??? OR RECREAT? OR RESTRUCTUR??? OR REDEFIN? OR R-
                EFORM??? OR REESTABLISH? OR REMAK??? OR RESTOR???)
S6       4137   S4(7N)(RE()(CONSTRUCT? OR BUILD??? OR PRODUC? OR CALCULAT?
                OR COMPUT??? OR CREAT??? OR STRUCTUR??? OR DEFIN??? OR FORM???
                OR ESTABLISH? OR MAK???))
S7     541652   S4(7N)(CONVERT? OR CONVERSION OR TRANSFORM? OR CHANG??? OR
                ALTER??? OR ALTERATION OR ADJUST??? OR ADJUSTMENT OR MODIF????
                OR MODIFICATION)
S8     174589   S4(7N)(BOOST??? OR AUGMENT??? OR ENHANC??? OR AMPLIF?)
S9          2   S2(100N)S5:S8
S10         0   S1(100N)S3(100N)S5:S8
S11         1   RD S9 (unique items)
```

T/3,K/1

11/3,K/1 (Item 1 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
(c) 2005 The Gale Group. All rts. reserv.

01283751 Supplier Number: 45345037 (USE FORMAT 7 FOR FULLTEXT)
NEURALWARE ANNOUNCES BREAKTHROUGH NEURAL SOLUTION FOR END USERS
News Release, pN/A
Feb 20, 1995
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 652

... of advanced technologies
and expert heuristics to automate all of the steps in developing a **neural network** model. This includes □fuzzy□
logic, genetic algorithms,
dynamic hill climbing, Kalman **filtering** , conjugate gradient methods,
and neural networks. Predict uses NeuralWare's Neural Network
Development Methology as the basis for selecting train and test sets, **transforming** data, selecting **important**
input variables, and buildinga
neural network. Though the Basic mode provides for complete black-box
...
?

h gc c c g

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File 347:JAPIO Nov 1976-2004/Oct(Updated 050208)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200509
         (c) 2005  Thomson Derwent
File 348:EUROPEAN PATENTS 1978-2005/Jan W05
         (c) 2005 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20050203,UT=20050127
         (c) 2005 WIPO/Univentio
?


Set     Items   Description
S1       1242   NEUROFUZZY OR (NEURO OR NEURAL)()FUZZY OR FUZZY(5N)(NEURAL-
             ()(NET? ? OR NETWORK? ?))
S2         76   AU=(POLUZZI, R? OR MIONE, C? OR SAVI, A? OR POLUZZI R? OR -
              MIONE C? OR SAVI A?)
S3          6   S1 AND S2
```

T/5/ALL

3/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

016083290 **Image available**
WPI Acc No: 2004-241165/200423
XRPX Acc No: N04-191304
Filtering device for electrical signal, includes adder which receives and adds reconstructed samples, and outputs filtered signal samples
Patent Assignee: STMICROELECTRONICS SRL (SGSA)
Inventor: MARTINA G; **POLUZZI R** ; **SAVI A** ; VAGO D
Number of Countries: 030 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1395080	A1	20040303	EP 2002425541	A	20020830	200423	B

Priority Applications (No Type Date): EP 2002425541 A 20020830
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1395080	A1	E	21	H04R-003/00	

Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR

Abstract (Basic): EP 1395080 A1
NOVELTY - The filtering device (1) includes a adder which receives and adds the reconstructed samples, and outputs filtered signal samples. The signal processing channels receive input signal samples, and generate the reconstructed sa plesm Each signal processing channel is formed by a **neuro - fuzzy** filter.
USE - Use for filtering electrical signals e.g. signals coming from antenna arrays, biomedical signals, and signals used in geology.
ADVANTAGE - Simplifies filtering structure and reduces the amount of calculations to be performed during the filtering process. Provides a filtering device which is flexible and reliable over time. Enables the filtering device to adapt to existing conditions.
DESCRIPTION OF DRAWING(S) - The figure shows the general block diagram of the filtering device.
Filtering device (1)
Inputs (2L,2R)
Output (7)
pp; 21 DwgNo 1/11
Title Terms: FILTER; DEVICE; ELECTRIC; SIGNAL; ADDER; RECEIVE; ADD; RECONSTRUCT; SAMPLE; OUTPUT; FILTER; SIGNAL; SAMPLE
Derwent Class: T01; U22; W02
International Patent Class (Main): H04R-003/00
File Segment: EPI

3/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

014690055 **Image available**
WPI Acc No: 2002-510759/200255
XRPX Acc No: N02-404301
Filtering device used for noise reduction, has neuro - fuzzy□filter for□ **generating output samples from input samples and reconstruction weights**
Patent Assignee: STMICROELECTRONICS SRL (SGSA)

h gc c c g

Inventor: **MIONE C** ; **POLUZZI R** ;□SAVI A□
Number of Countries: 027 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1211636	A1	20020605	EP 2000830782	A	20001129	200255	B
US 20020123975	A1	20020905	US 2001996014	A	20011128	200260	

Priority Applications (No Type Date): EP 2000830782 A 20001129
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1211636	A1	E	24	G06N-003/04	
US 20020123975	A1			G06F-015/18	

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

Abstract (Basic): EP 1211636 A1

NOVELTY - A computation unit (2) of a **neuro - fuzzy** filter (1) receives input samples of a signal to be filtered, for generating signal features. A **neuro - fuzzy** network (3) receives the signal features to generate reconstruction weights. A reconstruction unit (4) receives the input samples and the reconstruction weights for generating output samples.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for noise reduction method in filter.

USE - Filtering device for reducing noise in acoustic signals and images.

ADVANTAGE - Reduces white or colored type noise of the input signal and enables separation of the signals having different features, thereby preserving steep edges of the signals without causing any loss of the signal features.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the filter.

Neuro - fuzzy filter (1)
Computation unit (2)
Neuro - fuzzy network (3)
Reconstruction unit (4)
pp; 24 DwgNo 1/10

Title Terms: FILTER; DEVICE; NOISE; REDUCE; NEURO; FUZZ; FILTER; GENERATE; OUTPUT; SAMPLE; INPUT; SAMPLE; RECONSTRUCT; WEIGHT
Derwent Class: T01
International Patent Class (Main): G06F-015/18; G06N-003/04
File Segment: EPI

3/5/3 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

01700493
Device and method for filtering electrical signals, in particular acoustic signals
Vorrichtung und Verfahren zum Filtern elektrischer Signale, insbesondere Akustischer Signale
Dispositif et procede de filtrage de signaux electriques notamment pour signaux acoustiques
PATENT ASSIGNEE:
STMicroelectronics S.r.l., (2522150), Via C. Olivetti, 2, 20041 Agrate Brianza (Milano), (IT), (Applicant designated States: all)
INVENTOR:
Poluzzi, Rinaldo , Piazza Istria, 2, 20125 Milano, (IT)
Savi, Alberto , Via J.F. Kennedy, 18, 20097 San Donato Milanese, (IT)

h gc c c g

Martina, Giuseppe, Via Valsesia, 44, 20152 Milano, (IT)
Vago, Davide, Via E. Toti, 19, 21047 Saronno, (IT
LEGAL REPRESENTATIVE:
Cerbaro, Elena et al (53282), c/o Studio Torta S.r.l. Via Viotti, 9, 10121 Torino, (IT)
PATENT (CC, No, Kind, Date): EP 1395080 A1 040303 (Basic)
APPLICATION (CC, No, Date): EP 2002425541 020830;
DESIGNATED STATES: DE; FR; GB; IT
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: H04R-003/00

ABSTRACT EP 1395080 A1
A device for filtering electrical signals has a number of inputs (2L, 2R) arranged spatially at a distance from one another and supplying respective pluralities of input signal samples. A number of signal processing channels (10L, 10R), each formed by a **neuro - fuzzy** filter, receive a respective plurality of input signal samples and generate a respective plurality of reconstructed samples. An adder (11) receives the pluralities of reconstructed samples and adds them up, supplying a plurality of filtered signal samples. In this way, noise components are shorted. When activated by an acoustic scenario change recognition unit (5), a training unit (4) calculates the weights of the **neuro - fuzzy** filters, optimizing them with respect to the existing noise.
ABSTRACT WORD COUNT: 116
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 040303 A1 Published application with search report
Examination: 041027 A1 Date of request for examination: 20040825
LANGUAGE (Publication,Procedural,Application): English; English; Italian
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200410	1863
SPEC A	(English)	200410	5677
Total word count - document A			7540
Total word count - document B			0
Total word count - documents A + B			7540

3/5/4 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

01432012
Filtering device and method for reducing noise in electrical signals, in particular acoustic signals and images
Filtereinrichtung und Verfahren zur Reduzierung von Gerausch in elektrischen Signalen, insbesondere akustische Signale und Bilder
Methode et dispositif de filtrage pour reduire le bruit dans des signaux electriques, en particulier des signaux acoustiques et des images
PATENT ASSIGNEE:
STMicroelectronics S.r.l., (1014060), Via C. Olivetti, 2, 20041 Agrate Brianza (Milano), (IT), (Applicant designated States: all)
INVENTOR:
Poluzzi, Rinaldo , Piazza Istria 2, 20100 Milano, (IT)
Mione, Cristoforo , Via Gambate 26, 23854 Olgiate, (IT)
Savi, Alberto , Via Kennedy 78, 20097 San Donato Milanese, (IT
LEGAL REPRESENTATIVE:
Cerbaro, Elena, Dr. et al (53281), STUDIO TORTA S.r.l., Via Viotti, 9,

h gc c c g

10121 Torino, (IT)
PATENT (CC, No, Kind, Date): EP 1211636 A1 020605 (Basic)
APPLICATION (CC, No, Date): EP 2000830782 001129;
DESIGNATED STATES: DE; FR; GB; IT
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G06N-003/04

ABSTRACT EP 1211636 A1
The filtering device (80) comprises a **neuro - fuzzy** filter (1; 80) and implements a moving-average filtering technique in which the weights for final reconstruction of the signal (oL3 (i)) are calculated in a **neuro - fuzzy** network (3) according to specific fuzzy rules. The fuzzy rules operate on three signal features (X1(i), X2(i), X3(i)) for each input sample (e(i)). The signal features are correlated to the position of the sample in the considered sample window, to the difference between a sample and the sample at the center of the window, and to the difference between a sample and the average of the samples in the window. The filter device for the analysis of a voice signal comprises a bank of **neuro - fuzzy** filters (86, 87). The signal is split into a number of sub-bands, according to wavelet theory, using a bank of analysis filters including a pair of FIR QMFs (H0)), H1))) and a pair of downsamplers (85, 86); each sub-band signal is filtered by a **neuro - fuzzy** filter (86, 87), and then the various sub-bands are reconstructed by a bank of synthesis filters including a pair of upsamplers (88, 89), a pair of FIR QMFs (G0)), G1))), and an adder node (92).
ABSTRACT WORD COUNT: 199
NOTE:
Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):
Application: 020605 A1 Published application with search report
Examination: 030129 A1 Date of request for examination: 20021204
LANGUAGE (Publication,Procedural,Application): English; English; Italian
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200223	2144
SPEC A	(English)	200223	5372
Total word count - document A			7516
Total word count - document B			0
Total word count - documents A + B			7516

3/5/5 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

00793870
Programmable analog fuzzy processor
Programmierbarer analoger Fuzzy-Prozessor
Processeur analogique flou programmable
PATENT ASSIGNEE:
STMicroelectronics S.r.l., (1014060), Via C. Olivetti, 2, 20041 Agrate Brianza (Milano), (IT), (Proprietor designated states: all)
CO.RI.M.ME. CONSORZIO PER LA RICERCA SULLA MICROELETTRONICA NEL MEZZOGIORNO, (1176171), Stradale Primosole, 50, 95121 Catania, (IT), (Proprietor designated states: all)
INVENTOR:
Bruno, Dario, Via Crescenzio, 3, I-90142 Palermo, (IT)
Poluzzi, Rinaldo , Piazza Istria, 2, I-20100 Milano, (IT)
Manaresi, Nicolo, Via Tambroni, 11, I-40137 Bologna, (IT)

h gc c c g

Franchi, Eleonora, Via Castiglione, 142, I-40136 Bologna, (IT
LEGAL REPRESENTATIVE:
Botti, Mario (87642), Botti & Ferrari S.r.l., Via Locatelli, 5, 20124 Milano, (IT)
PATENT (CC, No, Kind, Date): EP 740261 A1 961030 (Basic)
EP 740261 B1 020925
APPLICATION (CC, No, Date): EP 95830171 950428;
PRIORITY (CC, No, Date): EP 95830171 950428
DESIGNATED STATES: DE; FR; GB; IT
INTERNATIONAL PATENT CLASS: G06G-007/60; G05F-003/24
CITED PATENTS (EP B): EP 489913 A; EP 562916 A; EP 617359 A; WO 90/06547 A
CITED REFERENCES (EP B):
PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON FUZZY SYSTEMS, vol. 1, 28 March 1993 - 1 April 1993, SAN FRANCISCO, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, pages 516-520, XP000371469 HUERTAS J.L. ET AL.: "A fuzzy controller using switched-capacitor techniques"
IEEE TRANSACTIONS ON NEURAL NETWORKS, vol. 4, no. 3, 1 May 1993, pages 496-521, XP000361827 TAKESHI YAMAKAWA: "A fuzzy inference engine in nonlinear analog mode and its application to a fuzzy logic control";

ABSTRACT EP 740261 A1
The analog processor of this invention is programmable and capable of storing the processing coefficients in analog form.
It comprises a storage section (MEM) having at least one output, plural outputs in most cases, and being adapted to respectively generate programming signals (PP) on such outputs; the storage section (MEM) is input a plurality of supply voltage signals (VI) and is operative to produce, in connection with information stored therein, one of the supply voltage signals on each of the outputs, it being understood that one voltage signal may be produced on several such outputs.
Advantageously, the processor can also be programmed in a simple manner from circuits of the digital type if switches (SW) controlled by storage elements (E) are used in the storage section (MEM). (see image in original document)
ABSTRACT WORD COUNT: 155
NOTE:
Figure number on first page: 5

LEGAL STATUS (Type, Pub Date, Kind, Text):
Change: 010516 A1 Title of invention (English) changed: 20010328
Examination: 20000209 A1 Date of dispatch of the first examination report: 19991223
Lapse: 031105 B1 Date of lapse of European Patent in a contracting state (Country, date): DE 20021228,
Grant: 020925 B1 Granted patent
Change: 010822 A1 Title of invention (English) changed: 20010706
Change: 020116 A1 Title of invention (English) changed: 20011129
Oppn None: 030917 B1 No opposition filed: 20030626
Application: 961030 A1 Published application (A1with Search Report ;A2without Search Report)
Examination: 970625 A1 Date of filing of request for examination: 970421
*Assignee: 980826 A1 Applicant (name, address) (change)
Change: 990428 A1 Representative (change)
LANGUAGE (Publication,Procedural,Application): English; English; Italian
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	830
CLAIMS B	(English)	200239	773

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CLAIMS B	(German)	200239	708
CLAIMS B	(French)	200239	887
SPEC A	(English)	EPAB96	4623
SPEC B	(English)	200239	4622
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Total word count - document B			6990
Total word count - documents A + B			12444

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DIALOG(R)File 348:EUROPEAN PATENTS
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Fuzzy analog processor with temperature compensation
Analoger Fuzzy-Prozessor mit Temperaturkompensation
Processeur analogique flou avec compensation de temperature

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CITED REFERENCES (EP B):
PROCEEDINGS OF THE THIRD IEEE CONFERENCE ON FUZZY SYSTEMS. IEEE WORLD CONGRESS ON COMPUTATIONAL INTELLIGENCE (CAT. NO.94CH3430-6), PROCEEDINGS OF 1994 IEEE 3RD INTERNATIONAL FUZZY SYSTEMS CONFERENCE, ORLANDO, FL, USA, 26-29 JUNE 1994, ISBN 0-7803-1896-X, 1994, NEW YORK, NY, USA, IEEE, USA, pages 1676-1681 vol.3, SASAKI M ET AL 'A novel implementation of fuzzy logic controller using new meet operation';

ABSTRACT EP 740260 A1

The analog processor of this invention can carry out processings independently of the operating temperature and process parameters, in a reliable manner and at high performance levels using fairly simple circuitry.

To achieve this independence, the processor is basically implemented and integrated with MOS transistors, has both voltage inputs (AI) and outputs (OUT), and includes a biasing section (BIAS) which supplies voltage bias signals (VG), of which at least one is substantially the sum of a voltage proportional to the threshold voltage of the MOS transistors and a reference voltage.

This reference voltage can be extracted from a reference potential which is stable to temperature and process parameters, for example that produced by a bandgap type of generator.

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A major feature of the processor according to the invention is the linearity of its input-output characteristic relative to that reference voltage. It follows that it may be advantageous to extract that reference voltage by division from a signal indicating the width of the input signal variation range, thereby to achieve compensation for or independence of variations of this range. (see image in original document)

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Figure number on first page: 2

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CLAIMS B	(English)	200134	826
CLAIMS B	(German)	200134	753
CLAIMS B	(French)	200134	984
SPEC A	(English)	EPAB96	4555
SPEC B	(English)	200134	4554
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Total word count - document B			7117
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